

Configuring Windows Server 2003 for a Small Business Network, Part 1



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Many small businesses want to take advantage of the benefits of file sharing for their employees, but they don't have the on-staff expertise necessary to get a server off the ground properly. While a server and server software may be in the budget, paying a consultant several thousand dollars to setup and configure the server may not be. This article is the first in a series of articles aimed at a somewhat computer savvy user who wants to set up a network based on Windows Server 2003. The process doesn't have to be a nightmare, and this article will serve as a step by step HowTo for setting up a Windows Server 2003. A major goal of this series is to set up a network that can grow easily. Following this document, your network can expand and grow as your business does.

I will assume here that you have your server hardware in place, hooked up, and ready to go. There are many brands of servers out there and some may require configuration of their hard disk drives. Configuring the disk array is outside the scope of this document, but go ahead and post your questions on the forums. We'll help you as much as possible. For this article, I will assume that you either have one large disk drive or disk array which we will "partition" into two separate drives.

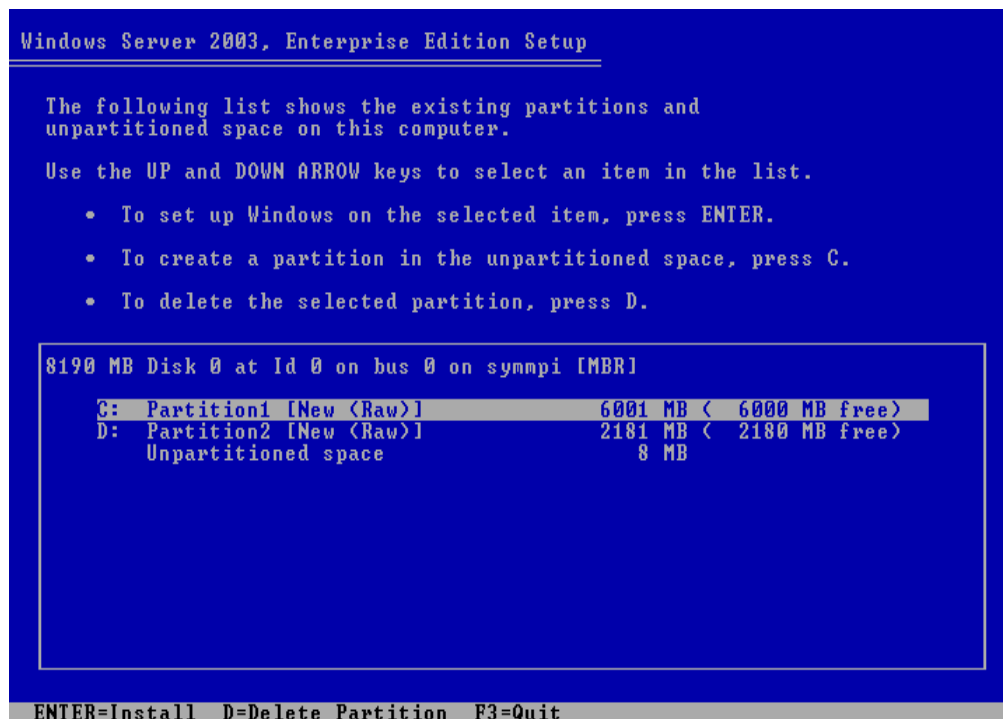
Step 1:

Find your installation CD(s), power on the server, and insert the installation CD. If your server doesn't boot up from the CD, you may have to press a certain key to enter a boot menu or to enter your BIOS to tell the server to boot from CD. The server should come to a black screen with "Press any Key to boot from CD..." at the top. Go ahead and press a key. The screen should turn blue and things will flash along the bottom. The only thing of interest here is that if you have a special disk controller that Windows doesn't have built-in drivers for, then you will need to have a disk for it. Just press F6 when you see the server prompt for it along the bottom of the screen. You will come to a screen that says press "ENTER" to set up Windows now. Go ahead and do that. On the next screen, you will need to press F8 provided that you agree to the license there. Of course, if you don't agree, you don't install Windows. So it is a no-brainer... Next you will come to the partitioning screen.

Step 2:

Select the Unpartitioned space, and press "C" to create our system partition. Next, enter the size of the partition in MB. I recommend using at least 6000 MB for the system drive. If you have lots of room to spare, say 70GB or more, then make your system partition about 15GB. Then select the unpartitioned space again, and create another drive. This time you can use the remaining available space. In my case, I only have 2GB to assign to it, but you will probably have much more. It doesn't matter. This will be your D: drive. Now your screen should look like **Figure 1-1**.

Figure 1-1

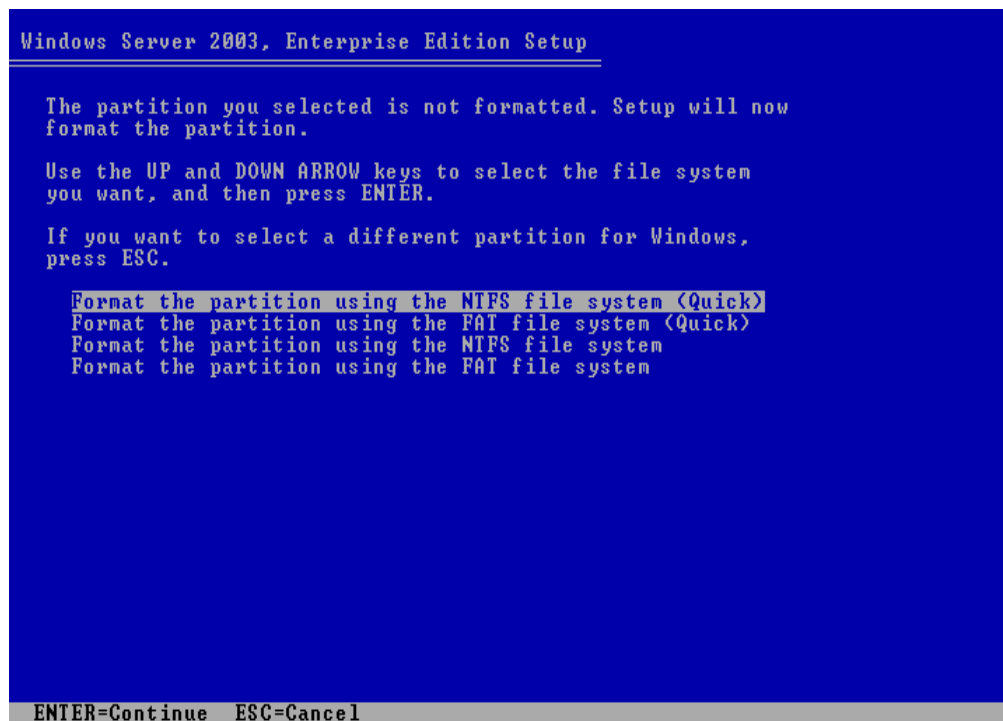


Step 3:

Now select the C: drive line like in **Figure 1-1** and press "ENTER." You will come to a screen that looks like **Figure 1-2**. I recommend using NTFS over FAT every time in a server environment. The reasons are too numerous to mention. Select

the "Quick format" option in **Figure 1-2**.

Figure 1-2



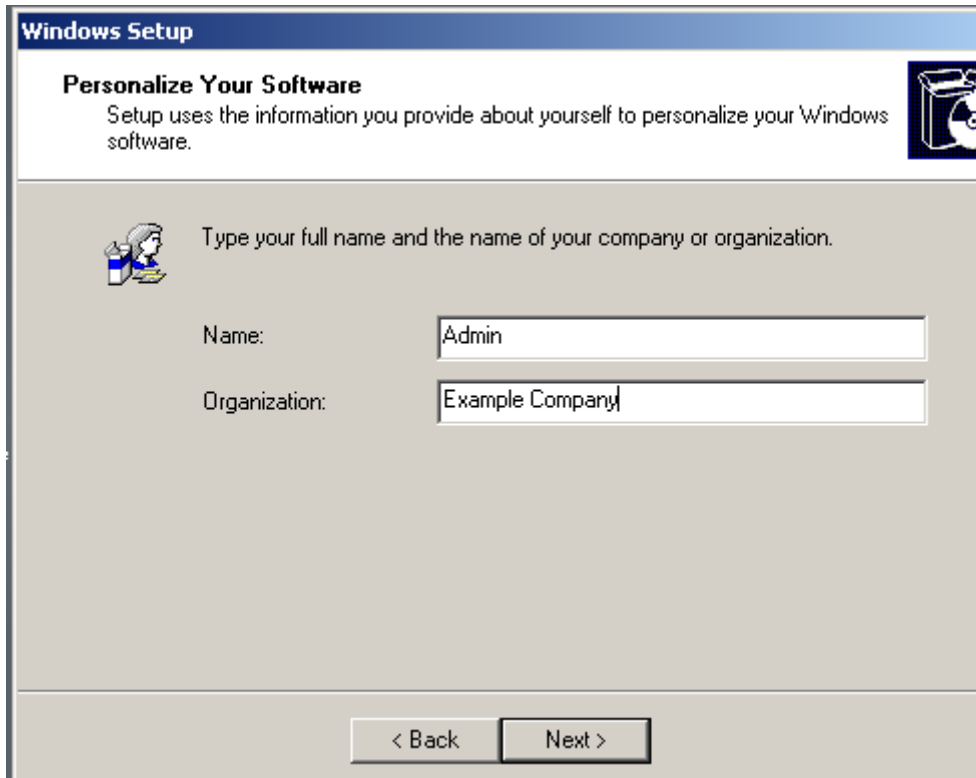
Step 4:

Now the server will copy files for a while and then reboot into a more graphical environment. You will come to a welcome screen that you can just click "Next" to go on through. The next screen allows you to choose language settings other than English, so unless you want your server to use a different language, then choose "Next."

Step 5:

The next screen allows you to "Personalize Your Server" so just choose an arbitrary name. I recommend refraining from funny or questionable names. Normally, I would enter the company name twice. In this example, I've used "Admin" and "Example Company." See **Figure 1-3**.

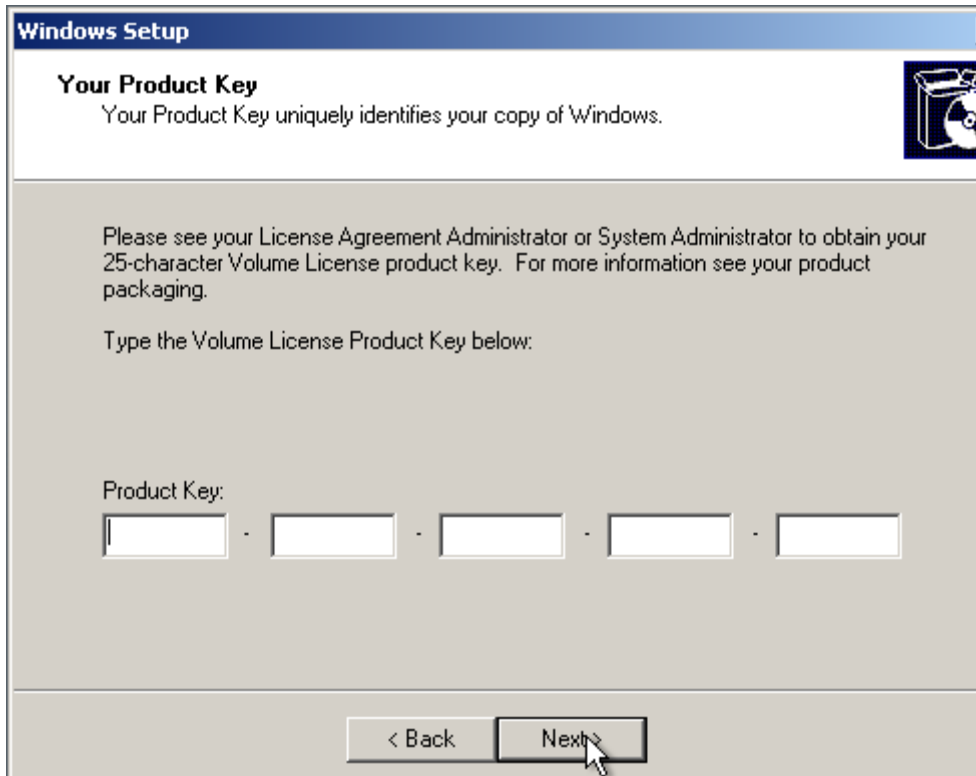
Figure 1-3



Step 6:

Enter your Product Key in the next window which looks like **Figure 1-4**. The product key should be on your CD case somewhere or on a certificate depending on how you acquired your copy of Windows Server 2003.

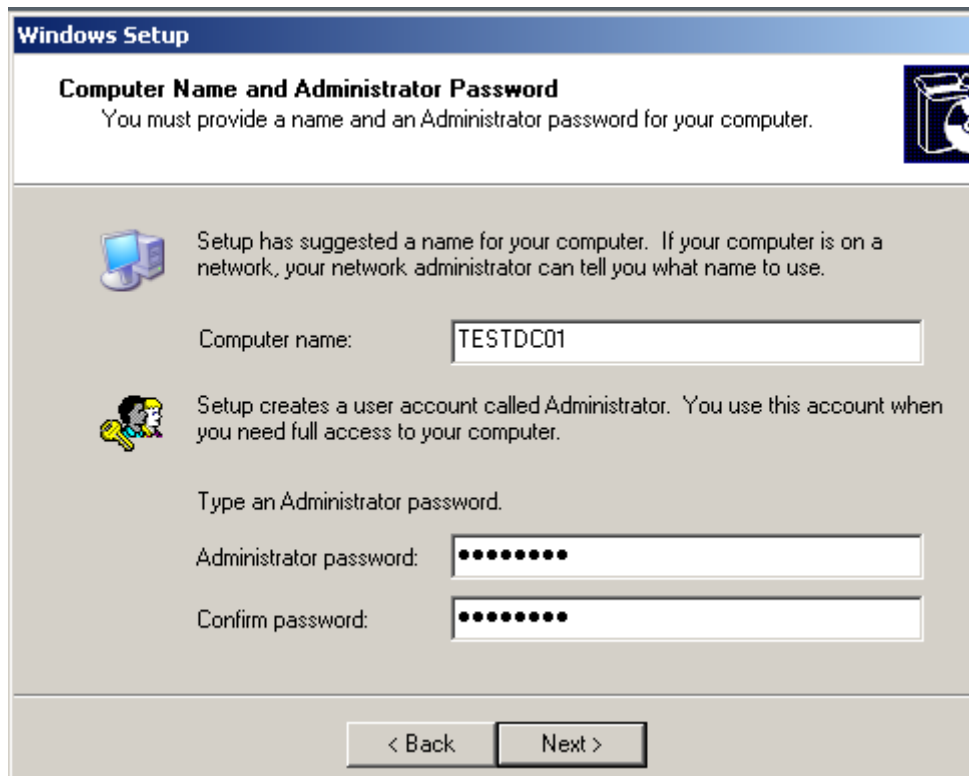
Figure 1-4



Step 7:

This screen allows you to name your server and pick a password for the "local" administrator account. See **Figure 1-5**.

Figure 1-5



Naming Your Server

Choosing a name for your server should take a bit of thought. I realize this document is aimed at small businesses which may never have more than one server. However, an ounce of planning here is worth a pound of "Hey, is that sales report on the Minnie, Mickey, or Goofy server?" down the road when your company grows. I recommend creating a naming convention consisting of a four letter designation for your site, a two letter function designation, and a 2 digit number to distinguish each server, e.g. "MAINDC01" for the first Active Directory Domain Controller (DC) at the Main location. Tying the first four letters of your server name to your location will relieve many headaches down the road. This server will be a domain controller, so I've chosen "DC" as a two letter function designation. Lastly, I add two digits to specify which server it is. So someday if you have 2 DC's and 3 file servers at a main location and a west-side-of-town location, then your server names could be MAINDC01, MAINFS01, MAINFS02, WESTDC01, and WESTFS01. For the name of my server, I've chosen TESTDC01.

Local Accounts Vs. Domain Accounts

You will hear the terms "local account" and "domain account" many times throughout these articles. All modern versions of Windows keep what is called a local account database. The local account database (or SAM database) is specific to each workstation. The downside of this is that it creates a lot of work when you have more than a few workstations. For example, say you have 10 workstations and 10 people. You want each person to be able to log on to whatever computer they want. Without a domain, you have around 100 accounts and passwords to manage. What a hassle! When you configure a workstation to logon to a domain (by "joining" that computer to it), anyone with a domain account can logon to that machine. Much easier! So just configure all of your user accounts in the domain, join your workstations to the domain, and you are set. We will get to doing that in a later article in this series.

Phew, now that we have that necessary bit of explanation down, we get to choose our administrator password. It is important to choose a "strong" password for this account. It holds the keys to the kingdom, so to speak.

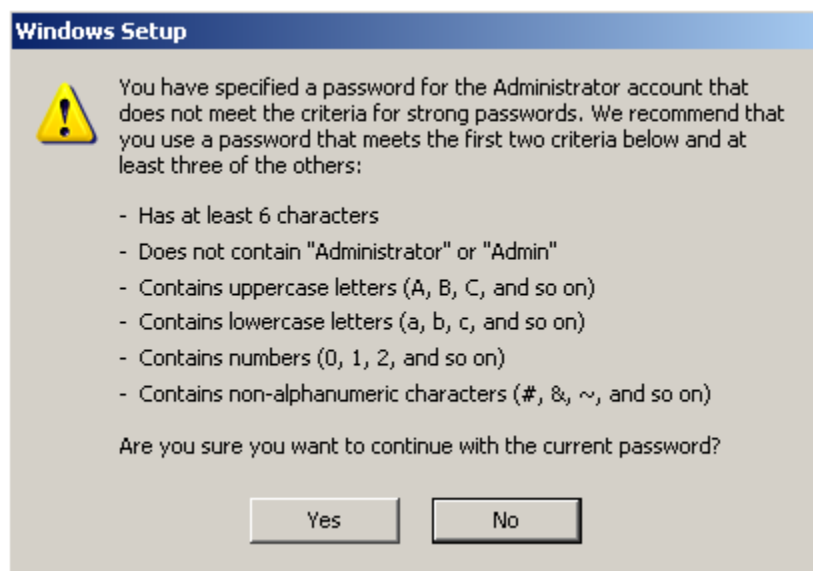
Strong Passwords

In Windows 2003, strong passwords consist of at least 6 characters and do not contain the words "Administrator" or "Admin." Additionally, they must be made up of three of the following: uppercase characters, lowercase characters, numbers, or non-alphanumeric characters. This may sound confusing, but I have a couple tricks that will help you make hard to crack but easy to remember passwords. One common technique is to substitute numbers for letters in a word. "Remember" would be "R3m3mb3r." That is a strong password because it is more than 6 characters, doesn't contain the forbidden words, and it has uppercase, lowercase, and numbers. Plus, it is easy to "remember!" You can also substitute non-alphanumeric characters for letters as well. \$un\$h!n3 might look like gibberish, but it is actually the word

"Sunshine" with \$'s for S's and !'s for i's. It is important to have strong passwords that are easy to remember. You can have a 20 digit randomly generated password, and it will do no good if you put it on a sticky note next to your monitor! One last technique that I like is taking a particularly memorable phrase and using the first letters of it. For example, "Stupid Is As Stupid Does" could become !@Siasd@!. I throw in the symbols at the beginning and end to strengthen the password.

If you don't put in a good enough password here, Windows will warn you with a message like **Figure 1-6**. So choose your own strong password and enter it here. Click "Next" to continue.

Figure 1-6



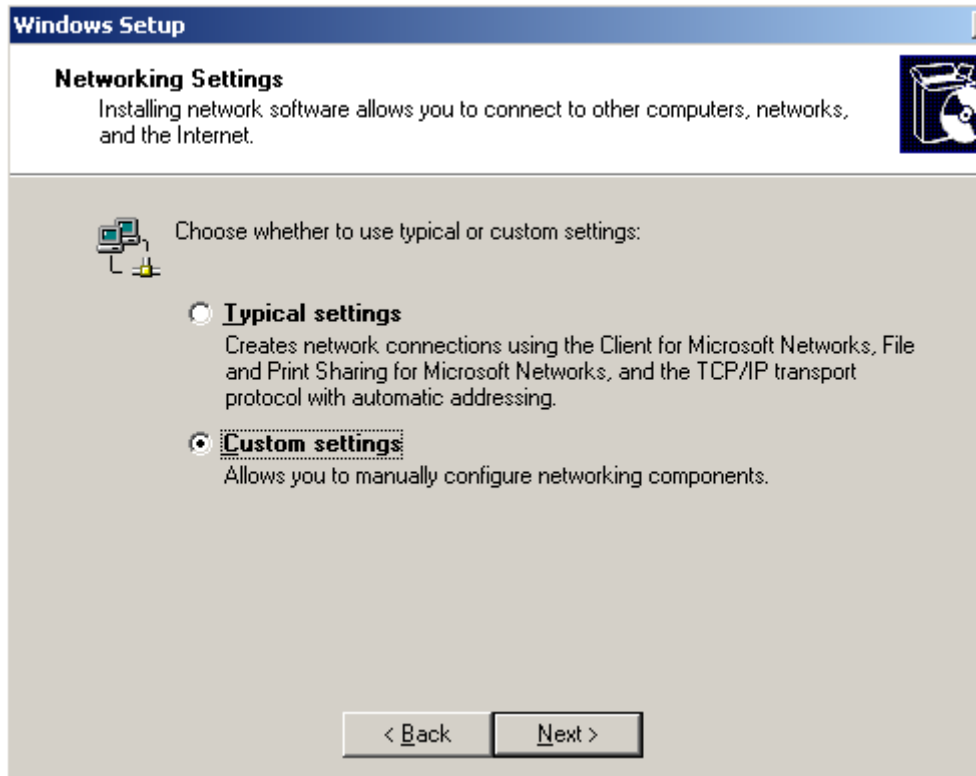
Step 8:

The next screen is an easy one! Simply choose your time zone, edit the time if necessary, and click "Next."

Step 9:

Next, you will see a screen that looks like **Figure 1-7**. We want to configure the network settings here, so choose the **Custom Settings** radio button and click "Next."

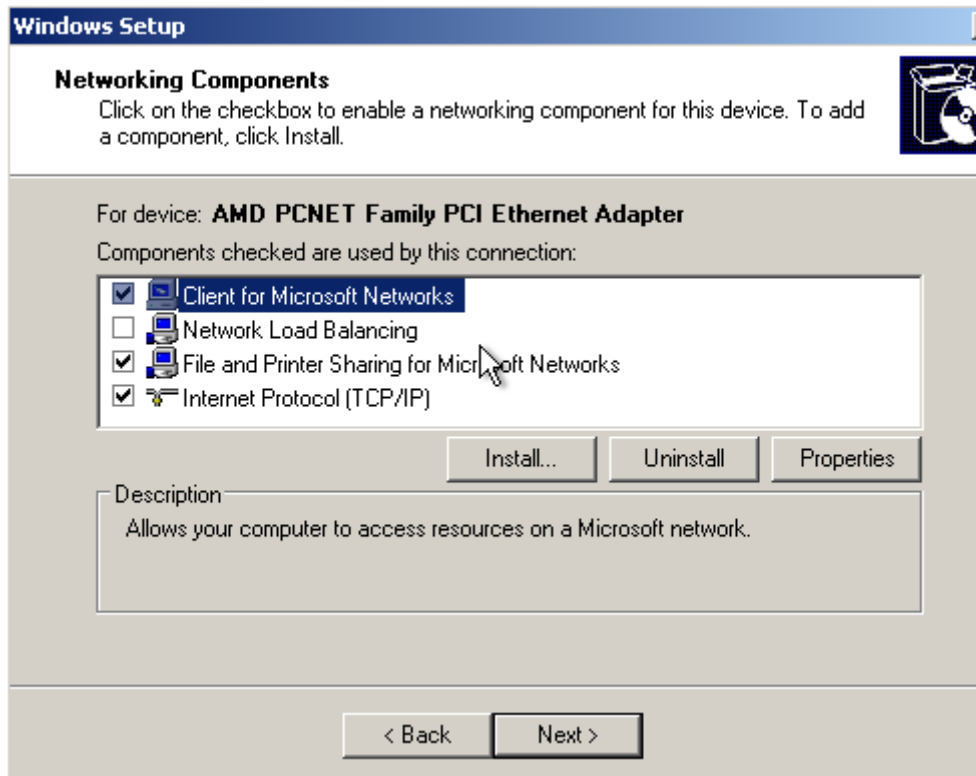
Figure 1-7



Step 10:

When you see the screen in **Figure 1-8**, click on the line for "Internet Protocol(TCP/IP) to highlight it, and click the "Properties" button.

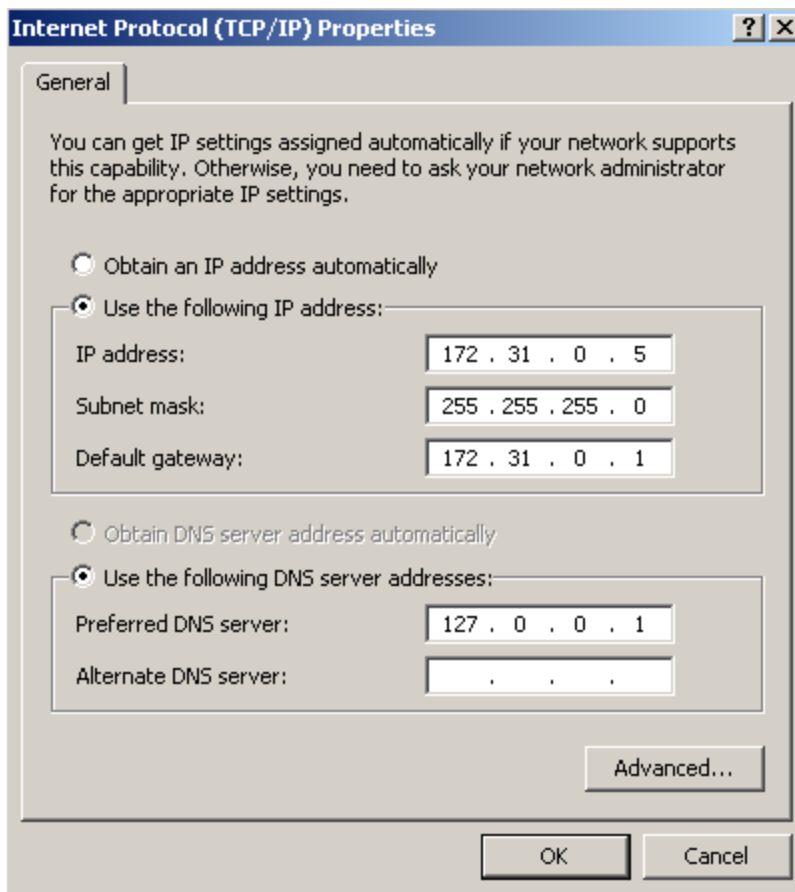
Figure 1-8



A window like **Figure 1-9** should pop up after you click "Properties." A full treatise of the TCP/IP protocol suite is beyond the scope of this document, but I will hit the highlights here. A basic "IP Address" consists of 4 numbers, each no more

than 254, separated by periods. 192.168.1.200 for example. What you really need to know about IP addresses here is this: There are "public" IP addresses and "private" IP addresses. "Public" IP's are used on the Internet, and "private" IP's are used in private networks. It is the job of a firewall to translate your private addresses into public addresses for communication on the Internet. You want to use a "private" IP address range now to avoid headaches later. The private ranges that you should use in your own network are: 10.X.X.X, 172.16-31.X.X, and 192.168.X.X (the X's here mean you can use 1-254). In this example, I have used 172.31.0.5 with a mask of 255.255.255.0 and a gateway of 172.31.0.1. Use settings that are specific to your existing network if you already have one. If you have no preexisting network, these settings will be fine. If you have an Internet connection, you can put in the DNS addresses that your Internet Service Provider gave you or put in 127.0.0.1. 127.0.0.1 is a special address that refers to the local computer. So with this setting, the server will ask itself for DNS information. We will be setting up a DNS server on this server for use with Active Directory. Click "Ok" when you are finished putting in the TCP/IP settings. Then click "Next" to continue.

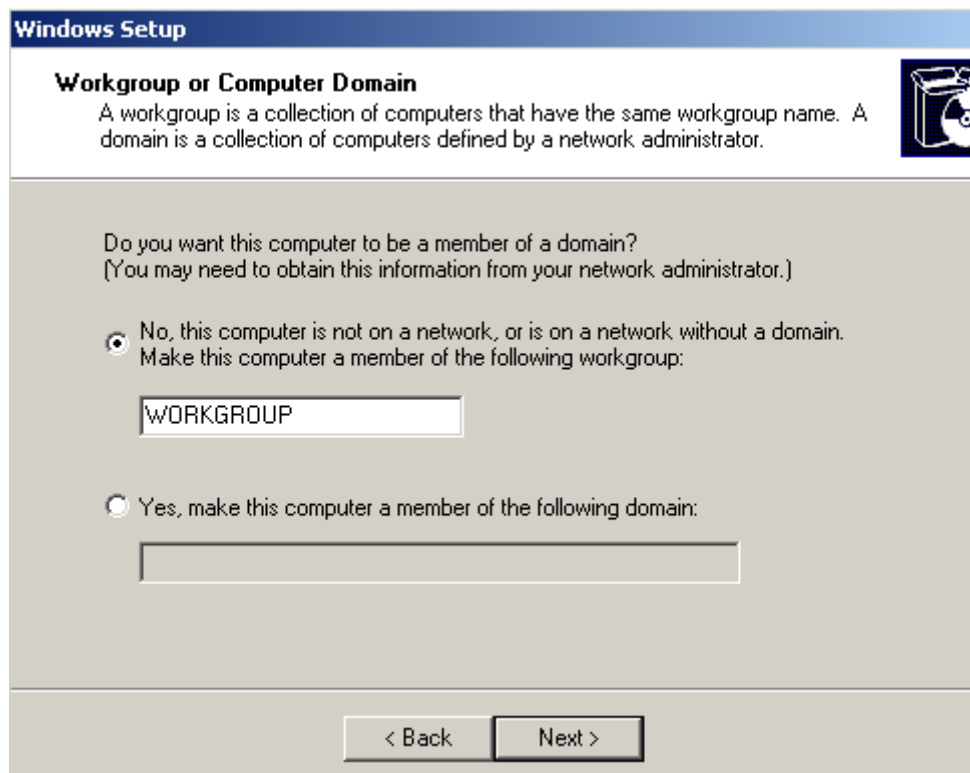
Figure 1-9



Step 11:

The next screen you should see is shown here in **Figure 1-10**. You can just leave this at the default workgroup of "Workgroup." After clicking "Next" the installation will continue on its own and reboot. Bringing you to **Figure 1-11**.

Figure 1-10

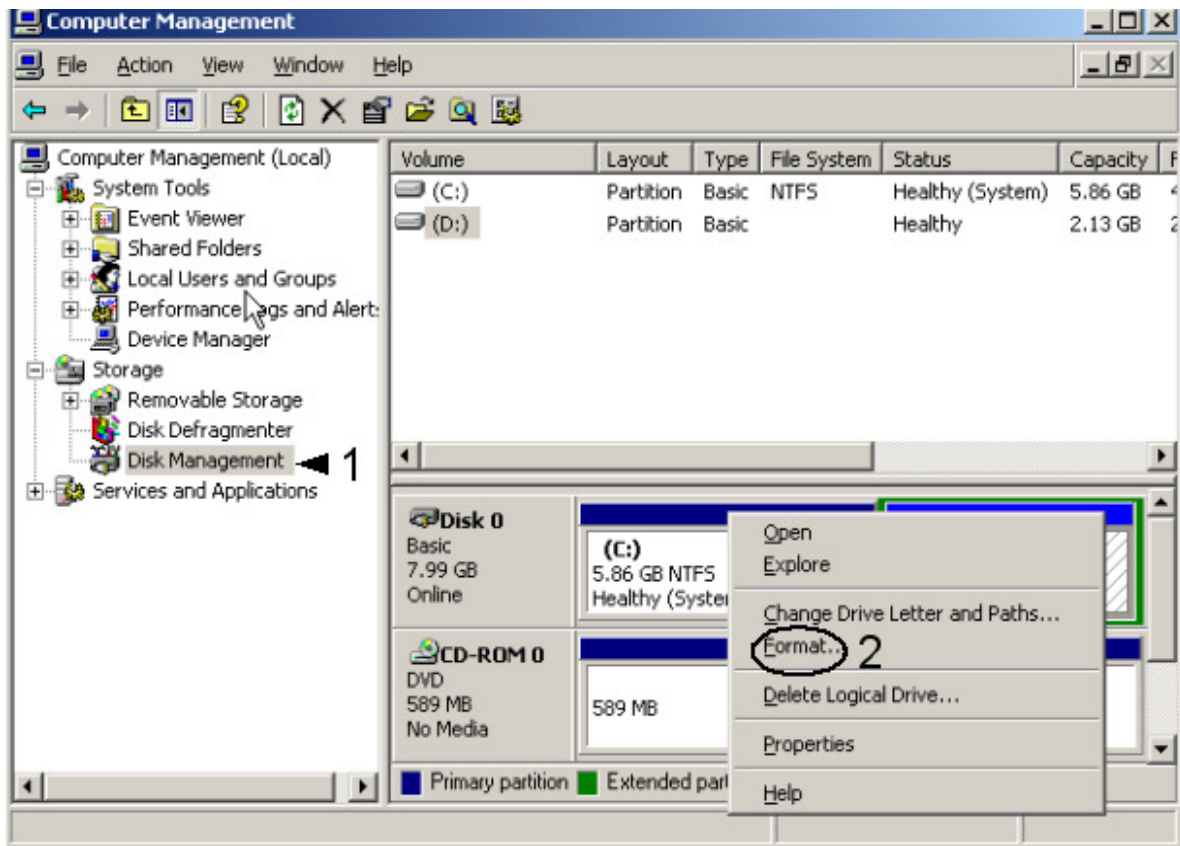
**Step 12:**

Now you are ready to logon to your server for the first time. The logon screen is shown in **Figure 1-11** Log in as "Administrator" and use the password you chose in **Step 7**.

Figure 1-11**Step 13:**

When you log in, you will probably see a window pop up about "Windows Server Post-Setup Security Updates." Don't worry about it for right now. We want to update our server, but we need to configure a few more things first. What we need to do now is click on the "Start" menu, then right-click on "My Computer" and choose "Manage" from the context window that comes up. That should bring you to the "Computer Management" window shown in **Figure 1-12**.

Figure 1-12



Expand the "Storage" tree in the left pane of the window, if it isn't expanded already, by clicking the "plus" sign next to it. Click on "Disk Management" marked by the numeral one in **Figure 1-12**. The right hand pane should display your disks in the top and the partition information below. Right-click on the unformatted D: drive in the bottom-right pane and choose "Format" as illustrated by the numeral two in **Figure 1-12**.

A dialog window will pop up to allow you to format the D: drive. Name the Volume something descriptive like Data or whatever you want. Choose "Perform a quick format" and hit OK. Say OK to the warning here about erasing all Data on D:. After formatting, it will say Data (D:), the size of your partition underneath that, and "NTFS Healthy". Now close that management window

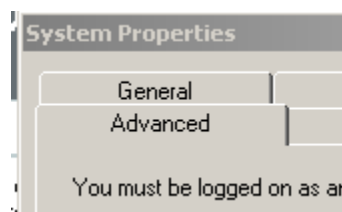
Step 14:

Please note: You may skip Step 14 if you were able to create a 15GB C: drive in Step 2. If you have a 6GB C: drive, then continue with Step 14.

Now we need to change the paging file arrangement on the server. The paging file is a file on the disk that acts like extra RAM for the system. When the server runs a program, that program takes up some system RAM for it to use. When that program is not doing anything, the server can "swap" the real RAM the program is using for virtual ram in the page file. This clears up real RAM for other programs that need to run. When a server doesn't have enough RAM, the server will have a problem called "excessive swapping" where the server spends most of it's time reading from and writing to the paging file. We want to move the paging file to the D: drive so drive C: isn't so cramped.

Now click on the "Start" menu, then right-click on "My Computer" and choose "Properties." A window will pop up called "System Properties." Click on the "Advanced" tab shown in **Figure 1-13**.

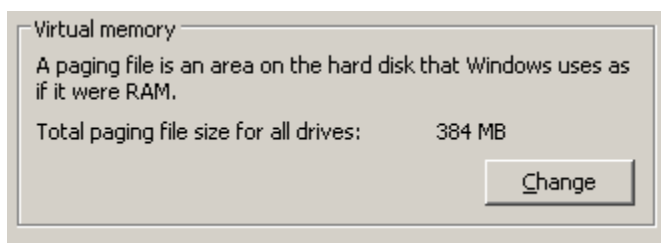
Figure 1-13



From the Advanced tab, click on the "Settings" button in the "Performance" box. A new window will appear labeled

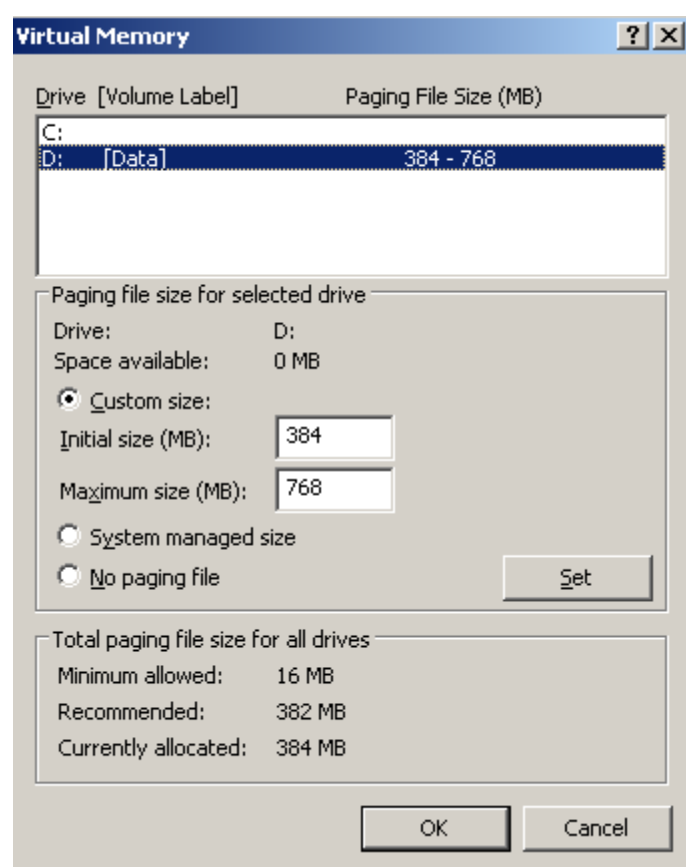
"Performance Options." From here, click on the "Advanced" tab, and then choose "Change" from the "Virtual Memory" box shown in **Figure 1-14**.

Figure 1-14



The next window will be labeled "Virtual Memory." Our goal here is to move the paging file from the C: drive to the D: drive. To do this, we need to click on the C: drive in the upper portion of the window, click the "No paging file" radio button, and click "Set." A warning will likely pop up about not having a paging file. Just click "OK" on that warning. Now click on D:, choose "Custom Size". Enter in a range for your paging file. The normal guidelines are your memory times 1.5 up to your memory times 3. Now click "Set." Now your paging file resides on the D: drive and you have free d up space on drive C:. Your window should look similar to **Figure 1-15** except the sizes will probably differ. Now you can click OK to close all 3 windows, and reboot the server.

Figure 1-15



Now you have a stand-alone server ready to be made into a Domain Controller or whatever you want. Part 2 of this series will focus on configuring Active Directory and setting up network services on your newly installed server.

Close Window